

EXECUTIVE SUMMARY

Hill Air Force Base (AFB) is considering installation of a groundwater containment system on a property located in Clinton, Utah. The purpose of the containment system will be to minimize the potential for further degradation of groundwater quality in the Clinton area due to the Tooele Army Railshop (TARS) portion of the Operable Unit 5 (OU 5) trichloroethene (TCE) plume.

To meet this objective a 600-foot long north-south oriented groundwater collection trench and downgradient slurry wall will be installed on the northern end of the property. The slurry wall reduces the potential for unacceptable settlement by minimizing water table drawdown associated with the system operation while still achieving containment. The proposed groundwater containment system will be described in the Engineering Evaluation and Cost Assessment (EE/CA) Amendment that is currently being prepared.

This document presents a Performance Standard Verification Plan (PSVP) for the containment system and defines data/monitoring needs for system performance verification and operation optimization. The objectives for system performance are :

- Containment of the TARS plume with TCE concentrations of 100 µg/l and higher to the east of the property
- Minimize the potential for further groundwater contamination migration downgradient of the system
- Comply with all discharge permit conditions
- Minimize the potential for unacceptable settlement and settlement induced stress on property and structures.

Attainment of these objectives will be measured using the following performance criteria:

1. **Containment**

- Monthly construction of piezometric surface plots to verify capture based on flow line construction
- On an annual basis, plot water quality data to determine if the 100 µg/l TCE contour is contained

2. **Prevention of Further Downgradient Groundwater Quality Degradation**

- Using the statistical evaluation method described in Appendix A, determine if the concentrations in downgradient monitoring wells have stopped increasing, are stable, or show signs of a decrease in concentration.

3. **Compliance with Discharge Permit Conditions**

- Samples of system effluent discharge will be analyzed and compared to the discharge permit limit for Total Toxic Organics of 2.02 mg/l.

4. No Adverse Settlement Induced Impacts

- Settlement monitoring point elevation measurements will be plotted and compared with water table drawdown to ensure they correlate with system induced water table changes. No system induced settlement is permitted along the railway easement. In the case of brick masonry structures the differential settlement attributable to system induced water level changes shall not exceed 1-inch in 60 feet.

In the event that any or all of these criteria are compromised, system operations shall be reviewed. If control of containment or settlement is not regained contaminant concentrations downgradient continue to rise, a detailed review of the system shall be performed to evaluate its long term benefits or the viability of potential engineering changes that could further enhance performance. This evaluation shall be reported in the Performance Standard Verification Report (PSVR) and an amended PSVP if necessary.

Attainment of these performance criteria will be measured using performance monitoring data including:

- measurement of groundwater elevations to confirm hydraulic containment
- analytical sampling of groundwater to monitor contaminant concentrations and groundwater quality trends downgradient of the system
- measurement of land surface settlement adjacent to the system, property boundaries, and on sensitive structures.

The routine operation of the system and associated performance monitoring will be documented in an annual report. The annual report will consist of three reports:

- the Treatment System Operation Report (TSOR)
- the Inspection, Monitoring and Maintenance Report (IMMR)
- the Performance Monitoring Report (PMR).

The annual report will review all system operation and performance data.

Evaluation of whether the containment system is operating properly and successfully relative to the performance objectives will be documented in a PSVR. The first PSVR will be completed in 2007, approximately 5 years after system startup. This timeframe is necessary to allow sufficient data to be collected to provide a degree of confidence that any trends that may be observed are significant.

Based on the observed system performance, any needed changes to the monitoring program, data assessment methods, data collection frequency, and review frequency will be recommended in the PSVR.